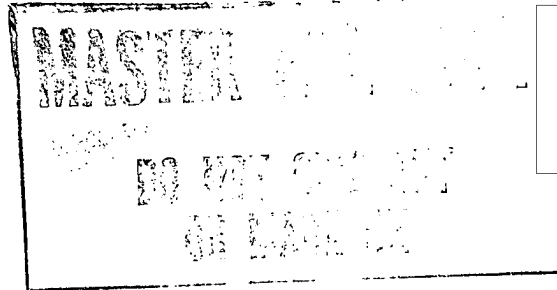




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The Iranian Mine Warfare Threat

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An Intelligence Assessment

NAVY Review Completed

NGA Review Complete

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NESA 84-10292C

November 1984

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The Iranian Mine Warfare Threat

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An Intelligence Assessment

This paper was prepared by [] Office of
Near Eastern and South Asian Analysis, with a
contribution from [] NESA. It was
coordinated with the Directorate of Operations. []

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Comments and queries are welcome and may be
directed to the Chief, Persian Gulf Division, NESA,
[]

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**The Iranian
Mine Warfare Threat**

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Key Judgments

*Information available
as of 1 October 1984
was used in this report.*

Iran's efforts to train mine warfare personnel, develop minelaying techniques, and obtain naval mines and associated mine technology have grown notably over the past year. These efforts suggest Tehran views mine warfare as a workable response to growing Iraqi military pressure on shipping in the Persian Gulf. If Iran embarks on a mine warfare campaign, it probably would lay a small number of mines over a few weeks or months to raise insurance rates and deter ships from entering mined areas:

- Iran has limited minelaying capabilities, but we believe the few hundred contact mines now in its arsenal are sufficient to carry out such a campaign in the Gulf.
- The Iranian Navy has practiced using helicopters to lay mines, and the Revolutionary Guard has trained personnel in mine warfare over the last six months.

The Iranians' mine warfare capability will improve over the next two years. Although Iran will not be able to make advanced mines in the near future, its emerging mine manufacturing capacity will allow it to produce a few hundred large contact mines annually in a few years. The Navy has begun to explore ways to modify existing ships and equipment for mine warfare.

Iran most likely would use mines first and most successfully against Arab Gulf ports—particularly those in Kuwait—because of their vulnerability and high volume of traffic:

- The campaign would be aimed at reducing oil exports and the flow of war material through Kuwaiti ports to Iraq.
- The Iranians probably would not mine the Strait of Hormuz because of their dependence on shipping through that waterway.
- Iran is also unlikely to mine areas outside the Gulf. Iranian leaders denounced the mining of the Red Sea, and they probably recognize that mining beyond the Gulf could result in sanctions on Iranian shipping and hamper efforts to buy weapons.
- To avoid US involvement, Iran probably would not mine areas regularly patrolled by US Navy ships in the southern Gulf.

Kuwait and Saudi Arabia would turn to the United States and other Western countries for help if their ports were mined because of their lack of modern antimine warfare equipment and expertise. US or other Western naval forces probably would have little difficulty neutralizing Iranian mines and could open mined areas within a few weeks once mineclearing operations began.

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The Iranian Mine Warfare Threat

Over the past year the balance of military power in the Persian Gulf has shifted increasingly in favor of Iraq. Iraqi ships and aircraft have attacked over 40 vessels since January, and Baghdad has threatened to expand its military pressure to force Tehran to end the war, according to press reports. In contrast, Iran's declining Air Force, with less than 70 fighter aircraft, has struck 14 ships. Most of the Iranian attacks have occurred in the southern Gulf because Tehran seeks to avoid clashes with Saudi aircraft. To compensate for its deficiencies, Iran apparently has begun to develop a naval mine warfare capability and strategy as a way to retaliate against Baghdad and its Gulf Arab supporters.

Capabilities

Revolutionary Guard. Over the last six months the Iranian Revolutionary Guard—*Sepah-e Pasdaran*—has made considerable efforts to train personnel for mine warfare.

Over the last four years the Guard has attempted to assume functions and capabilities of the regular armed forces and has taken steps to build an independent naval capability that could be used for mine warfare. the Guard attempted to expand its naval capability in December 1982 through a request to the Navy to share facilities. Guard personnel have served on some Navy vessels,

the Guard has acquired its own patrol boats.

Guard naval units assumed responsibility for defending and patrolling Iran's coasts in February 1983.

some Guards are being trained to fly helicopters that could be used over the Gulf.

We believe that the Revolutionary Guard would not hesitate to engage in minelaying operations if ordered to do so by the regime. Unlike the Air Force and Navy, the Guard is fiercely loyal to the government in Tehran. It has over 100,000 armed men under its command, is outside the control of the regular armed forces, and is responsible directly to the clerical leadership and Ayatollah Khomeini.

Tehran has assigned the Guard the task of planning small-boat suicide attacks on ships and bases in the Persian Gulf, and Guards have been trained to fly small aircraft on similar missions against ships.

Regular Navy and Air Force. Since 1983 the Iranian Navy also has taken steps to train personnel and develop techniques to increase its mine warfare capability. in October 1983 eight pilots practiced dropping mines from RH-53 Sea Stallion helicopters flying at low speeds and some 15 meters above the sea.

We estimate that Iran has between three and six operational RH-53s that can reach ports in Kuwait and Saudi Arabia from Iranian territory.

At the same time, the Iranians also have begun to explore ways to modify their existing equipment and ships for mine warfare.

the Navy could use its two 100-ton troop transport ships based at Bandar-e Abbas naval base as minelayers. The Iranians also may equip some of their commercial cargo vessels with cranes and guide rails to lay mines. In addition, Iran has two seaworthy frigates and nine

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seaworthy patrol boats that we judge could be altered to lay a small number of mines in the Gulf. As of late August 1984, however, [redacted] Iran had not begun the changes needed to modify Iranian naval vessels for mine warfare. [redacted]

Such modifications as well as additional personnel training probably would be necessary because the Navy lacks special mine warfare vessels. [redacted]

[redacted] Iran has no naval ships capable of laying mines. Iran also has no personnel able to disarm mines, [redacted] and the Navy's coastal and river minesweepers are no longer operational.

The Iranian Air Force and Navy have no fixed-wing aircraft configured to lay mines but could modify existing military or cargo aircraft for such missions. The Air Force has 20 operational C-130 cargo and two to six operational PC-3 aircraft that have the range and payload to carry large mines. They lack special aerial mines for aircraft, however, and would have to develop techniques to airdrop their existing mines that are designed to be laid from ships. Other Iranian helicopters besides the RH-53 could be adapted to carry and lay mines. [redacted]

Continuing opposition in the Air Force and Navy to the clerical regime and its policies suggests that some officers might oppose mine warfare missions in the Gulf. [redacted]

The Iranian Mine Arsenal. We estimate that Iran has between 200 and 500 sea mines in its inventory. [redacted]

[redacted] the Iranian Navy had a total of 200 mines purchased from North Korea. Although each of these mines is filled with 500 kilograms of explosive, they are fitted with contact detonators and not the more advanced acoustic or magnetic detonators. The Revolutionary Guard also received an unknown number of this type of mine from North Korea last spring, [redacted]

The Iranians have been unable to obtain modern sea mines from foreign sources over the last year despite considerable and continuing efforts. [redacted]

In addition to trying to purchase foreign mines, Iran has begun efforts to manufacture its own weapons. [redacted]

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Iraqi Mine Warfare

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We estimate that Iraq has between 500 and 1,000 mines, many of which probably are obsolete. [redacted]

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[redacted] Iraq has 500 old Soviet contact mines and also may have an unknown number of more sophisticated Soviet acoustic or magnetic mines. [redacted]

The Iraqis also claim to have laid mines near Khark Island, but there are no reports of ships hitting mines in that area. Mines probably laid by Iraq in the northern Gulf have drifted down the coast of Saudi Arabia and other Gulf states. [redacted]

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Iraq's capability to plant or neutralize mines appears to be limited largely to Iran's coasts in the northern Gulf. [redacted]

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Iraq has laid an unknown number of mines in Iran's coastal waters in the northern Persian Gulf during the war. These mines apparently have had little success in hindering shipping. [redacted]

[redacted] in 1983 small mines probably damaged two small vessels outside the port of Bandar-e Khomeyni, Iran's major port in the northern Gulf. [redacted]

The Iraqi Navy also has five minesweepers. Iraq's two oceangoing minesweepers, which can lay mines, may not be fully operational. These vessels and some other Iraqi patrol craft may have been used to lay mines near Iran's harbors in the northern Gulf. We doubt Iraq would send its helicopters or surface vessels farther into the Gulf and risk destruction by Iranian air and naval units. [redacted]

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Strategy

The Iranians appear to have recognized the limitations of their mine warfare capability and have adopted a strategy in which a few mines or the threat of mining would be used to deter shipping. [redacted]

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[redacted] Iran could use mines to raise insurance rates and dissuade ships bound for Arab Gulf ports from entering the Persian Gulf, [redacted]

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[redacted] such mining would be just as effective as a blockade [redacted]

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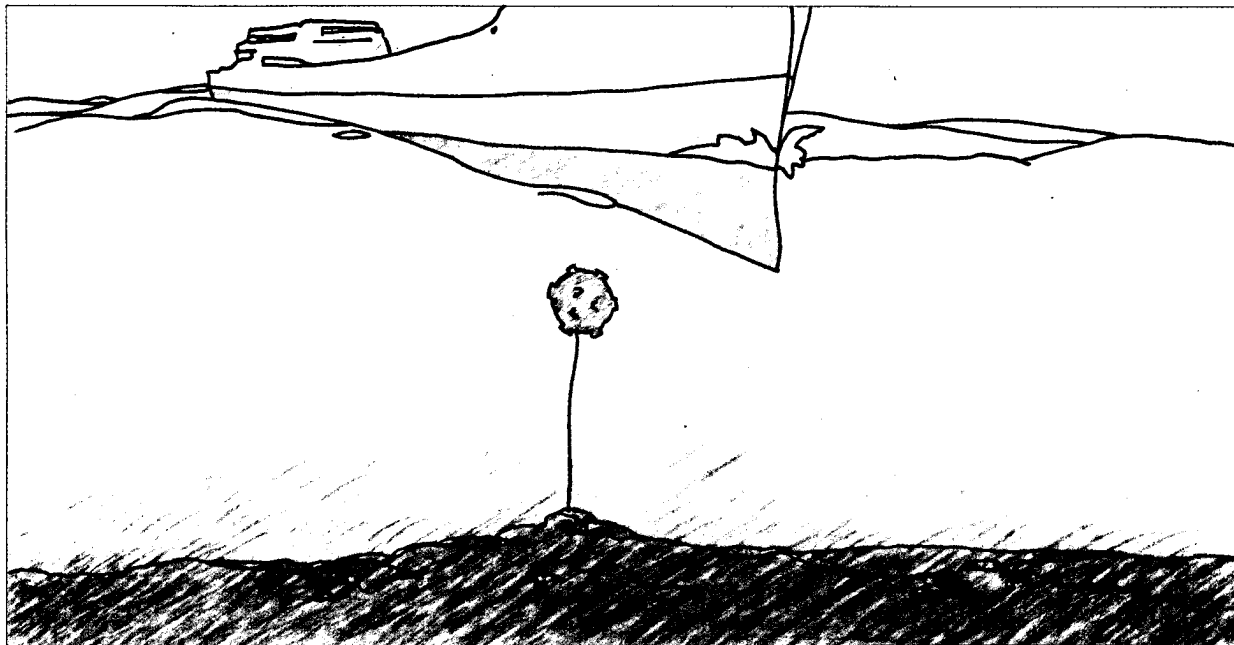
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Figure 1
Iranian Mines



	North Korean Mine	
Firing mechanism	Contact	
Warhead weight	500 kilograms	
Position	Moored	
Minimum/maximum depth	3/50 meters	
Remarks	Copy of obsolete Soviet World War II mine. Iran is attempting to make its own copies of this mine.	

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The large number of ships transiting the Gulf provide ample targets for mine warfare. As many as 60 ships pass through the Strait of Hormuz each day, about half to or from Kuwaiti or Saudi ports. An average of 12 tankers—carrying about 20 percent of the West's oil imports—arrive or depart oil-loading facilities at

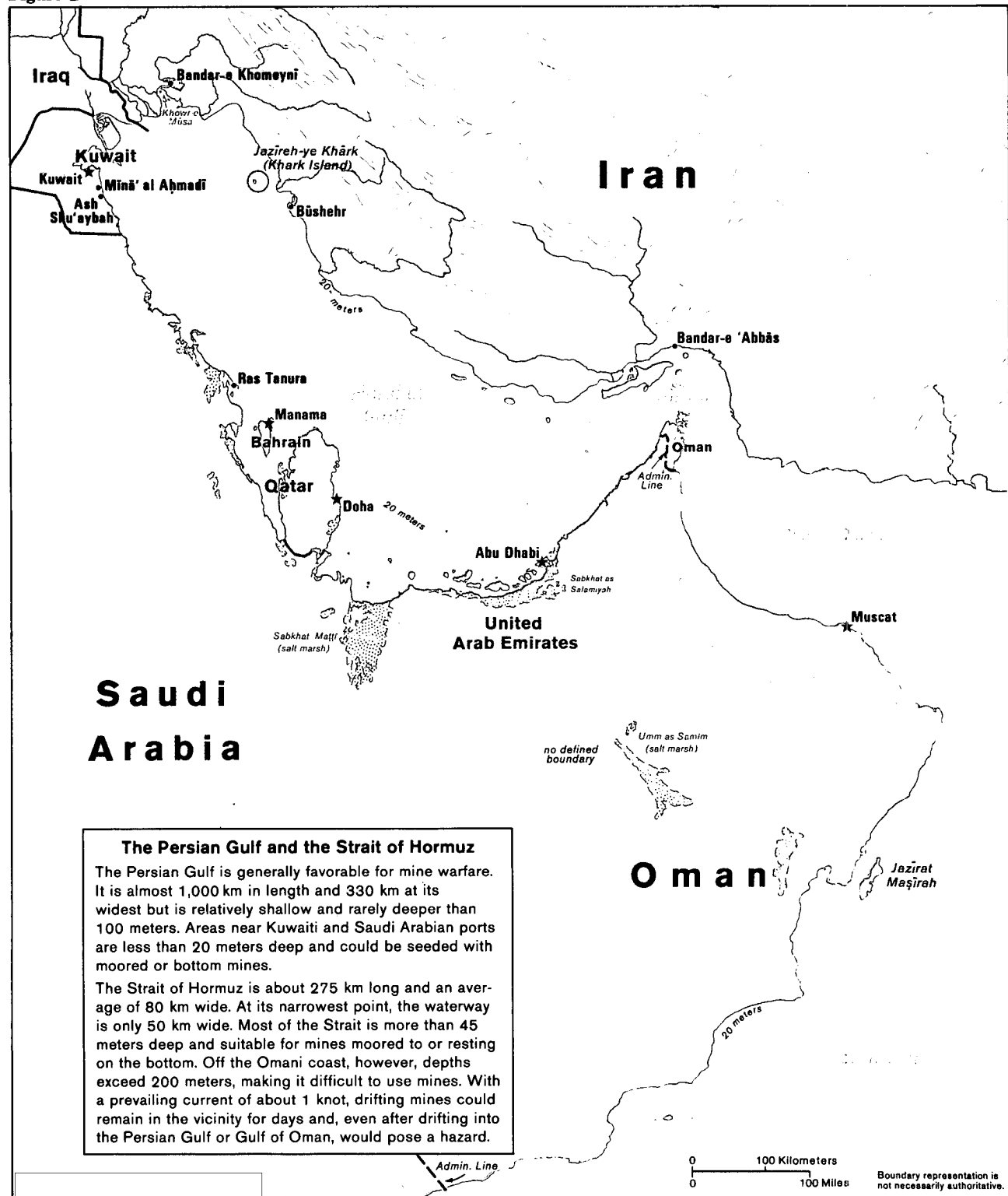
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Figure 2



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Ras Tanura in Saudi Arabia and Mina Al Ahmadi in Kuwait each day. In 1983, moreover, Iraq received over \$1 billion worth of Soviet-made tanks, artillery, and other military equipment through the port of Ash Shu'aybah in Kuwait. Kuwait depends on ship traffic to provide more than 85 percent of its food needs and nearly all the equipment to run the country's oil refineries and desalination plants [redacted]

Prospects

We believe the progress Iran has made in mine warfare training over the past year now gives it the capability to respond to Iraqi attacks on shipping with a limited campaign of mine warfare. Such Iraqi attacks on shipping are likely to increase as Baghdad acquires more aircraft capable of firing Exocet missiles in the next few months. In contrast, the Iranian Air Force's capability to defend friendly shipping or attack other vessels in retaliation will continue to decline as more aircraft are lost or become nonoperational. These trends increase the possibility that Tehran will consider mining as a tactic against Iraq and its Gulf supporters. [redacted]

Should it turn to mine warfare, Iran is likely to adopt a long-term strategy of sporadic mining primarily designed to raise insurance rates and thereby deter shipping bound for Arab Gulf ports. We believe Iran has enough contact mines to carry out such a plan. The Iranians probably will lay only a few of these mines in each operation, judging that if a ship has been damaged or sunk, the fear of encountering more mines will discourage other vessels from entering the area. The 500-kilogram contact mines in Iran's inventory are capable of seriously damaging or sinking even large ships. [redacted]

We believe Revolutionary Guards, rather than regular service personnel, are likely to be used in these missions because of their loyalty to the regime. The Iranians will take advantage of darkness, bad weather, cover from commercial vessels, and periods when AWACS aircraft are refueling to shield their mine-laying units from detection and interception. After some modifications, small patrol boats, aircraft, disguised or overt Iranian commercial vessels, and even dhows would be used to lay mines and confuse enemy defenses. New mines would be sown periodically or after sweep efforts to keep the mine threat credible. [redacted]

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Future Capabilities. Over the next year Iran's mine inventory is likely to consist only of crude contact mines. Its mine production program probably will be able to produce a few hundred such mines annually in the next few years. Even if Iran acquired sample advanced mine technology, the Iranian electronic industry probably could not duplicate the parts needed for magnetic and acoustic mines for several years. [redacted]

Iran will continue to try to buy advanced mines and mine technology abroad but probably will have limited success so long as the war with Iraq continues. The US arms embargo will discourage potential suppliers who also are concerned about the threat of a conflict in the Gulf that could endanger oil supplies, particularly if the mines could be traced to the supplying country. Moreover, because of their profitable arms trade with Iraq and the Arab Gulf states, many Western European countries that produce sophisticated mines are unlikely to sell mines or permit third parties to send them to Iran. [redacted]

Although Iranian capabilities to lay mines will remain limited in the short run, we judge they will be sufficient to implement sporadic mining operations. Over the longer term we believe Tehran probably will develop other, less orthodox ways to deliver mines. The Iranians are attempting to buy aircraft and ships that could be adapted for mine warfare. Moreover, we believe some Iranian commercial vessels could be modified to lay mines covertly in the Gulf or other areas of the world during commercial voyages. [redacted]

Arab Gulf State Ports. In our judgment, the Iranians would most likely, and could most effectively, use mines against Gulf Arab ports, particularly those in Kuwait. Mines would allow Iran to attack the shipping of Iraq's Arab supporters in areas where Iran's fighter aircraft can no longer fly because of Saudi air defenses. We judge that Iranian mines would—if not countered by competent and persistent minesweeping operations—reduce but not stop Kuwaiti imports and oil exports. Mining Kuwaiti ports would have the added benefit of potentially decreasing the supply of vital war material to Iraq. This would not, in our judgment, cripple Baghdad's ability to continue the war. Soviet arms shipments normally unloaded in Kuwait could be shifted to Saudi or Jordanian ports on the Red Sea and transported overland to Iraq. [redacted]

If the operations against Kuwait proved effective and went unchallenged, we believe Iran would consider mining Saudi ports. Saudi Arabia's main oil export facility at Ras Tanura, which exports 90 percent of the country's oil, would be a particularly tempting target for Iran, despite Saudi defenses. []

We believe the Arab Gulf states would be largely unable to preempt or neutralize Iranian mining activity. They lack the air and naval capability to locate and neutralize mines. They also are unlikely to acquire the equipment or expertise to counter mines effectively in the next few years. []

Strait of Hormuz. [] Iran is unlikely to mine the Strait of Hormuz because of fears about international intervention and Tehran's dependence on shipping to export oil and import supplies. We believe Iran's leaders wish to avoid Western military activity in the Gulf that would divert Iran's already limited resources from the war with Iraq. []

[] the clerical leadership appears to recognize the importance of keeping the Strait open for Iran's economy and to avoid foreign intervention. []

If Iraq were to attack and destroy Iran's major oil-exporting facility on Khark Island, however, we believe Tehran would be more likely to mine the Strait. The Iranians, however, probably would seed only a few mines in the Strait, and they would be restrained from trying to close it completely because of their need for seaborne supplies. Given the proximity of Iran's major naval base at Bandar-e Abbas, an Iranian campaign using mines, aircraft, and artillery to restrict access through the Strait would be fairly effective if unopposed by Western navies. The Gulf Arab states alone probably could not reopen and maintain free passage through the Strait. []

Operations Beyond the Gulf. In our judgment, Iran probably will not attempt to mine areas beyond the Gulf for the near future. High-ranking Iranian leaders—including Ayatollah Khomeini—publicly disavowed responsibility for and denounced the mining of the Red Sea. Mining outside the war zone could sink nonbelligerent shipping, for example, a passenger liner, resulting in condemnation of Iran and perhaps

Gulf State Minesweeping Capabilities

In our judgment, Saudi Arabia—the only Arab Peninsula state with minesweepers in its inventory—has only a limited mine warfare capability. As underscored by its request to France and the United States for minesweepers following the mine explosions in the Red Sea last August, the kingdom remains dependent on external assistance to help it deal with even a minimal mine threat. US Navy reporting from both 1983 and 1984 rated the mine warfare skills of the Saudi squadron of four minesweeping ships as generally low. The ships have fairly modern equipment, but personnel deficiencies remain the primary barrier to an effective Saudi minesweeping capability. The limited education of most Saudi recruits, normal attrition, and widespread personnel shortages that often result in the transfer of trained personnel to positions where they are more urgently needed hinder the retention of crucial technical skills in the all-volunteer Saudi Navy. Given the Navy's personnel problems and its need to absorb a large amount of equipment recently received or due for delivery within the next two to three years, we anticipate little immediate improvement in Saudi minesweeping capabilities. []

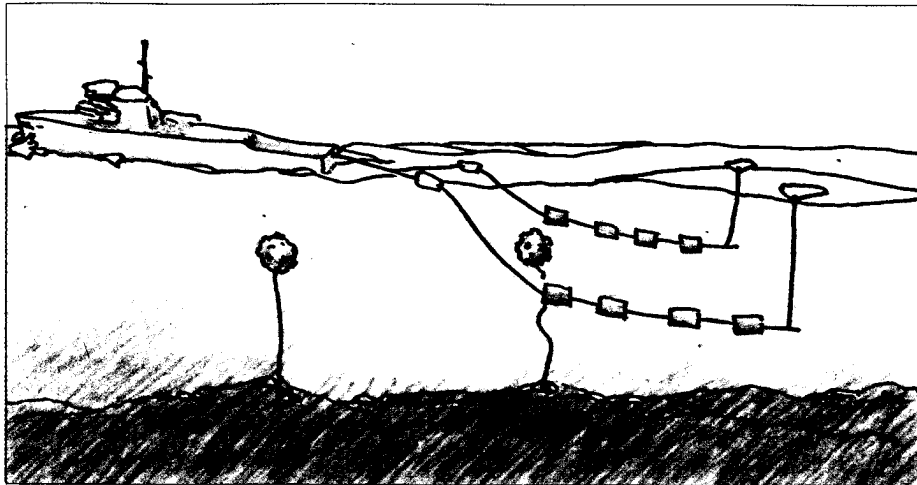
Lacking mine warfare craft in their navies, the smaller Gulf states also would require external assistance to counter Iranian mining. Kuwait and Oman have considered acquiring mine warfare craft, but personnel shortages, limited funds, and the Kuwaiti Navy's need to absorb the recent delivery of eight missile patrol craft probably will rule out purchases of such ships in the near future. []

international restrictions or prohibitions against Iranian vessels. Such activity also could undermine Iran's efforts to buy desperately needed weapons from foreign countries. []

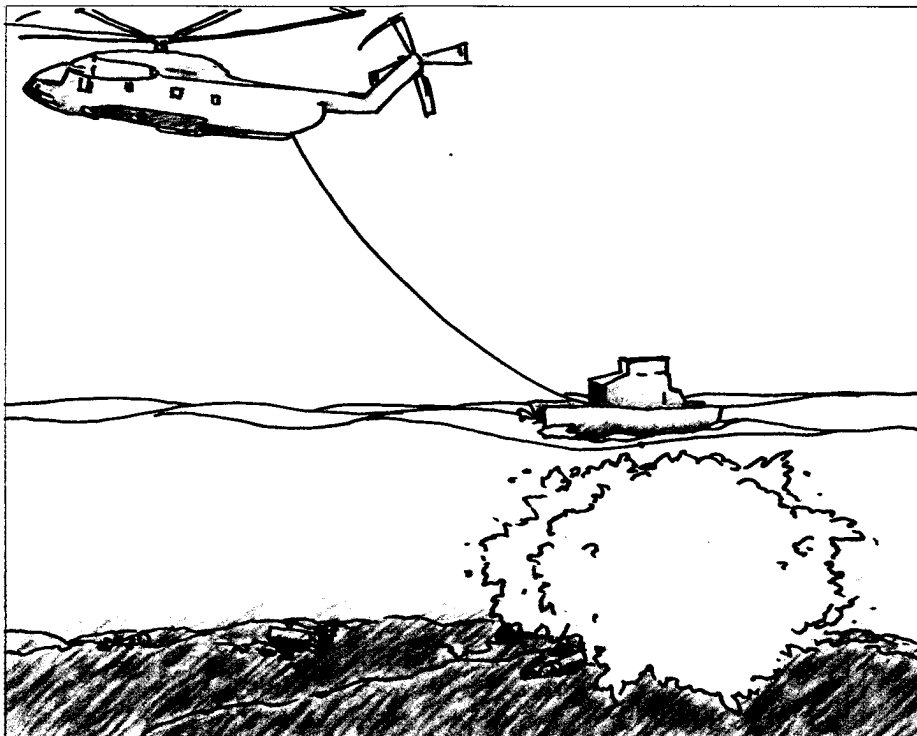
Implications for the United States

Kuwait and Saudi Arabia probably would ask the United States for help in neutralizing Iranian mines because of their limited mine warfare capabilities and the continuing vulnerability of their ports. We believe

Figure 3
Minesweeping Operations



Non-metallic-hull minesweeping ships pull underwater wires in the area where mines have been reported. The cutters or explosive charges attached to the wires cut the cable connecting the moored mine to its anchor. After the mine floats to the surface, the minesweeper uses heavy machinegun or cannon fire to destroy it.



A helicopter tows a mine sled that simulates the metallic hull of a large ship and sets off magnetic mines. The helicopter can also pull a special device simulating the ship engine noises that set off acoustic mines.

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US or Western naval forces would have little difficulty clearing unsophisticated Iranian mines from anywhere in the Persian Gulf, but US mine warfare aircraft would need a week and ships might take a month to reach the Gulf. Arab ports or the Strait of Hormuz could be reopened within a few more weeks once operations began. A long-term US presence, however, probably would be necessary to keep crucial areas free of mines if Iran mounted a persistent mine warfare campaign. This could lead to confrontations between US and Iranian forces if US ships or aircraft came upon Iranian units before or as they were laying mines. []

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Iranian mines would present little direct danger to US Navy ships in the Gulf in the short term. To avoid an incident that might give the United States an excuse to intervene in the Gulf, Iran probably would not mine areas patrolled regularly by US Navy vessels. US commercial vessels and Navy ships, however, would run the same risk as other vessels using Arab Gulf ports mined by Iran. Moreover, some Iranian mines could break free from their moorings and drift through the Gulf and the Strait of Hormuz, presenting a hazard to all ships. []

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